DOCUMENT
DE TRAVAIL
N° 474

THE EFFICIENCY OF ENTERPRISE ZONE PROGRAMS SOME CONFLICTING RESULTS?

Florian Mayneris and Loriane Py

January 2014

DIRECTION GÉNÉRALE DES ÉTUDES ET DES RELATIONS INTERNATIONALES

DIRECTION GÉNÉRALE DES ÉTUDES ET DES RELATIONS INTERNATIONALES

THE EFFICIENCY OF ENTERPRISE ZONE PROGRAMS SOME CONFLICTING RESULTS?

Florian Mayneris and Loriane Py

January 2014

THE EFFICIENCY OF ENTERPRISE ZONE PROGRAMS: SOME CONFLICTING RESULTS?

Florian MAYNERIS[*], Loriane PY[**]

[*] Université catholique de Louvain, IRES, CORE; florian.mayneris@uclouvain.be

[**] Banque de France et Institut des politiques publiques; loriane.py@banque-france.fr. The views expressed in this paper are those of the authors and do not necessarily reflect those of the Banque de France.

Abstract – We propose in this paper a critical review of the literature on urban enterprise zones. The results that emerge from the papers published over the last twenty years vary a lot across studies. Several explanations can account for these apparently conflicting results. Technical tools and empirical methods for the evaluation of such policies have greatly improved since the 1990's. Moreover, it seems that the efficiency of urban enterprise zones depends on zone characteristics, industrial sector and policy design. Further research in this area should try to better take into account general equilibrium effects, in order to provide a more accurate measure of the welfare implications of these policies.

Keywords - ENTERPRISE ZONES, LITÉRATURE REVIEW, HETEROGENEOUS EFFECTS.

JEL Classification – R12, R38, R58.

Résumé – Dans cet article, nous proposons une revue critique de la littérature sur les Zones Franches Urbaines. Les résultats mis en évidence par les évaluations publiées ces vingt dernières années varient considérablement selon les études. Plusieurs facteurs peuvent expliquer ces résultats contradictoires en apparence. D'abord, les outils techniques et les méthodes empiriques d'évaluation ont connu de grandes améliorations depuis les années 1990. Par ailleurs, l'efficacité de ces zones franches urbaines semble varier selon les zones, selon les secteurs et selon la nature des dispositifs. Enfin, les travaux dans ce domaine devront s'attacher dans le futur à mieux tenir compte des effets d'équilibre général de manière à pouvoir fournir une mesure plus précise des implications en termes de coût-bénéfice de ces politiques.

Mots-clés **–** EFFETS HETEROGENES, REVUE DE LITTERATURE, ZONES FRANCHES.

Classification JEL – R12, R38, R58.

INTRODUCTION

In many countries, cities feature strong internal disparities, with wealthy neighborhoods often situated a few blocks away from depressed urban areas. In these latter zones, residents have usually a low level income and education, a high level of unemployment, and live in deprived social housing. As a matter of fact, in 2008, in the deprived areas targeted by urban policies in France, 28.8% of the population lives under the poverty line[1] (12% at the national level), the average income of residents is 40% lower than the average income of population in the same agglomeration, and in 2009, the unemployment rate reaches 18.6% while the national average on the whole French territory is equal to 9.5%.

These strong inequalities within cities have important economic and social implications. They are often linked to social segregation phenomena, rich people self-selecting into specific neighborhoods where housing prices become so high that poor people cannot afford living there. Deprived urban areas being seen as less attractive for both residential and business purposes, the deterioration of the economic and living conditions in these zones tend to accelerate, which can lead, in some cases, to urban violence, as exemplified by the riots in the French suburbs in 2005 or in Stockholm in 2013.

In order to tackle these issues, many governments have implemented *Urban Enterprise Zone* programs. These policies appeared at the end of the 1970's in the UK and in the US. The main idea of these programs is to provide tax exemptions in order to reduce business costs and labor costs in targeted zones, so as to attract firms and increase local employment, improve the welfare of zones residents and promote the (re)development of lagging urban areas. The efforts put in these policies vary across countries, but they often represent large amounts of money. In the UK, around 90 euros per resident in the working–age population were spent for the Local Enterprise Growth Initiative areas (i.e. around 95 million euros per year between 2006 and 2009, Einio and Overman, 2011); in California, the enterprise zone policy represents 200 euros per worker (i.e. around 240 million euros in total in 2005, Neumark and Kolko, 2010) and finally in France, 1,800 euros per worker and 360 euros per resident are spent in 2007 in the Zones Franches Urbaines (i.e., around 540 million euros in total, Mayer et al., 2012).

The justification and efficiency of enterprise zones remain however controversial. First, there are concerns about the relative costs of these policies with respect to their rather limited achieved benefits on local business creation and employment. Second, even when enterprise zones manage to (re)develop economic activity, whether the residents of these zones – those initially targeted– benefit from these programs, remains a pending issue. These considerations have led some economists and policy makers to question the replacement of these *place-making policies* by *people-based policies*, (Gleaser and Gottlieb, 2008).

In this paper, we propose a critical review of the literature on urban enterprise zones. We show that the results obtained since the mid-1990's vary a lot across studies and countries.[2] We then argue that part of these conflicting results can be attributed to

[1] In France, the poverty line is set to 60% of the median income, and corresponds to 949 euros in 2008 (according to the French Ministry in charge of urban policies).

[2] In line with the early implementation of Enterprise Zones in the US, the empirical literature on EZ first grew in the early 90's, mainly based on the US experience (see in particular Wilder and Rubin (1996) for a literature survey). In this paper, we focus on more recent research in this field in order to shed light on the new insights brought by these

technical and estimation issues. Beyond these technicalities, we show that the different results of impact evaluations also reflect a real heterogeneity in the efficiency of urban enterprise zone policies depending on zone characteristics, on sectors or on the design of the policy. Finally we suggest that the important general equilibrium effects of enterprise zones would need to be better taken into account when it comes to properly evaluate their efficiency, incidence and impact on the welfare of zone residents.

2. ENTERPRISE ZONES : DIFFERENT OUTCOME OF INTEREST AND DIFFERENT RESULTS

Since the 1990's, an important literature has carried out empirical evaluations of enterprise zones. However, studies differ largely in terms of outcome of interest, and results appear very mixed depending on the schemes.

2.1. Enterprise zones and business creations

The first objective of these programs is to promote the development of economic activity in targeted zones, by providing tax credits on capital and/or labor, usually for existing, newly located or newly created firms in targeted zones. However, as the potential effects on local business creation and employment growth are likely to depend on the ability of these programs to attract new firms, it is crucial to assess the impact of enterprise zones on firm location decisions. Several studies have explored this dimension. While Billings (2009) finds no significant effect of the designation of enterprise zones on the number of establishments in Colorado, Neumark and Kolko (2010) tend to find a negative effect in the case of the program conducted in California, and Hanson and Rholin (2011) conclude to a positive impact of US federal enterprise zones. In the case of France, two studies evaluate the recent French enterprise zone program – *the Zones Franches Urbaines* policy- on business creation[3]. They conclude respectively to a positive impact of the French enterprise zone on the probability that plants locate in targeted areas and on the number of establishments in targeted zones (Mayer et al., 2012, Givord et al. 2013). Hence, results regarding the impact of enterprise zones on business creation seem to differ widely in the US and in France, and depending on the program (state or federal policy in the US).

2.2. Enterprise zones and labor market outcomes

The second objective of these programs is usually to enhance local employment growth in targeted areas. Yet, results relative to the impact of enterprise zones on employment growth also vary significantly depending on the studies. In evaluations of US enterprise zone programs, many studies find no significant effect on employment growth in designated areas (see for instance, Boarnet and Bogart (1996) in the case of New Jersey; Bondonio and Engberg (2000) in their evaluation of enterprise zones in California, Kentucky, New York, Pennsylvania and Virginia; Neumark and Kolko (2010) in the case of California and Lynch and Zax (2011) in the case of Colorado). Some studies conclude to a rather positive impact of some US enterprise zone programs

studies, but also in order to highlight the recent and important improvements in empirical methods used EZ evaluations.

[3] The French Ministry of Labor has recently asked and funded an evaluation program of the French Enterprise Zones, which contributed to stimulate recent research in this area in the French case.

(see O'Keefe (2004) in the case of enterprise zones in California; Ham et al. (2011) in their evaluation of US State Enterprise Zone, Federal Empowerment Zone and Federal Enterprise Community programs; and Busso et al. (2013) in the case of Round I of the Federal Empowerment Zone Program in the urban communities of Atlanta, Baltimore, Chicago, Detroit, New York city and Philadelphia/Camden). Studies on European countries conclude to a positive impact of enterprise zones on labor market outcomes, with some restrictions. Einio and Overman (2011) evaluate the impact of the Local Enterprise Growth Initiative in the UK. They find a positive effect on employment, obtained however at the expense of the immediate periphery of targeted zones. In the case of France, two studies find a positive impact on employment growth, though in the short-run only (Rathelot and Sillard, 2009; Givord et al., 2013); the authors interpret this result as a shock modifying the level of employment, but not the trend. Overall, again, the results regarding the impact of enterprise zones on local employment growth appear very mixed depending on the program.

2.3. Enterprise zones: which impact for zone residents?

Finally, once the effect of urban enterprise zones on firm creation and employment growth has been assessed, there remains the crucial question of whether these enterprise zone programs benefit to zones residents or not – i.e. to the population initially targeted by these place-based policies. Several indicators have been used to measure the impact of enterprise zones on the welfare of residents: employment of zone residents, wage and income of zone residents and property values. Results obtained in the literature also tend to differ according to the outcome of interest and depending on the studies.

Several studies have tried to assess the impact of enterprise zones on the employment of zone residents specifically; indeed, growing employment in targeted zones does not necessarily imply that firms hire local workers, in particular due to potential spatial mismatch between the skills needed by firms and the skill available locally. In the US, while Elevery (2009) does not find evidence that the designation of enterprise zones in California and in Florida affect the employment probability of zones residents, Busso et al. (2013) conclude that federal empowerment zones have a significant and positive impact on the employment of zone residents. In the case of France, Gobillon et al. (2012) focus on the effect of French enterprise zones in the Paris region. They find a small effect on the rate at which unemployed workers in targeted areas find a new job, this effect being however significant in the short-run only. Charlot et al. (2012) study the evolution of the socio-economic conditions in the zones targeted by the French program and do not find evidence of any impact on the unemployment rate. The evidence is therefore mixed regarding the US and the French experiences.

Some other studies have focused on factor prices rather than quantities. Indeed, if the designation of enterprise zones succeeds in promoting the development of local economic activities, this can change factor prices in case of imperfect mobility of production factors. On the one hand, one could expect that the relative demand for residents or for their skills increases and that it would translate into a relative increase in their wage or income. Ham et al. (2011) and Busso et al. (2013) do tend to find a positive impact of US programs on the income and wage of zone residents. On the other hand, the benefits of these programs could be weakened if the induced increase in economic activity capitalizes into property value, and this is actually what Hanson (2009) shows in its evaluation of the US Empowerment zones program.

Given the diversity of the results obtained in the literature, it is difficult to conclude regarding the impact of enterprise zones on business location, employment

growth and welfare of residents. There are several explanations to these apparently conflicting results. Some technical issues are certainly at play: the tools researchers have at their disposal to precisely delineate the targeted zones, as well as the econometric methods available for the evaluation of these public policies have greatly improved over the past twenty years. Beyond these technical challenges, the effects of enterprise zones might be heterogeneous along several dimensions, such as zone characteristics, sector or program characteristics.

3. WHY SO MANY CONTRADICTORY RESULTS? DELINEATION OF ZONE BOUNDARIES AND ENDOGENEITY ISSUES

The exact identification of targeted zones in the data and the treatment of endogeneity issues are two dimensions along which researchers have made considerable progress over the past few years, and which can explain some of the diverging results in the literature.

3.1. The challenge of the geographical identification of targeted zones

Ideally, a convincing evaluation of an enterprise zone program would require having first, exact information on the boundaries of targeted zones, and second, both pre and post treatment data on economic and social characteristics at the targeted zone level. However, a major concern in the evaluation of these place-based policies is that they usually target relatively small geographical areas whose boundaries do not necessarily match administrative boundaries such as cities, municipalities or districts, making it tricky to precisely measure their geographical limits. Studies carried out over the past 20 years have therefore adopted different methods to overcome these data and technical issues.

Several studies consider that the entire municipality or city in which an enterprise zone is located is actually treated. For instance, Boarnet and Bogart (1996) in the case of New Jersey, consider the whole municipality as an enterprise zone while only one district – only 30% of municipality land - is actually targeted by the program. In the same vein, Bondonio and Engberg (2004) and Bondonio and Greenbaum (2007), which also evaluate enterprise zones in the US, consider that an entire ZIP code is part of an enterprise zone if it includes any portion of an enterprise zone. While this method can be justified by data limitation, one important issue is that the imprecise identification of enterprise zone boundaries is likely to bias the estimated impact of the policy on economic outcomes: indeed, the different neighborhoods of a municipality do not suffer from the same initial lack of attractiveness, and such a strategy might inadequately identify the impact of the policy in case of displacement effects within municipalities.

With the development of sophisticated Geographical Information Systems, attempts have been made to better identify the boundaries of targeted zones. Now, it is possible to precisely draw the boundaries of enterprise zones on a map and to better measure local economic activity within and outside the boundaries of enterprise zones. In the case of France, Mayer et al. (2012) use information on the exact geographical boundaries of enterprise zones and on administrative boundaries of census blocks to assess whether an establishment is located in a census block which belongs to an enterprise zone or not (data on the location of establishments being not geocoded at the address level). They are thus able to delineate enterprise zone boundaries in the data with a precision equivalent to the size of a building block. Thanks to the information provided by zone coordinators, Billings (2009) is able to construct a digital map of each

enterprise zone and to compare economic outcomes in terms of business and job creations within a 1/4 mile buffer around each enterprise zone border. Finally by creating digitized maps of original zone boundaries and later expansions, and by combining these maps with geocoded observations on businesses located in California, Neumark and Kolko (2010) are able to very precisely measure the impact of Californian enterprise zones on employment.

These improvements in the identification of the targeted zones have three main advantages. First, they allow for a more accurate evaluation of enterprise zone programs. Second, they make it possible to measure some potential spillovers of the designation of the geographical zones on their neighborhoods. On the one hand, the creation of enterprise zones might create a positive dynamic on their nearby areas. On the other hand, the existence of tax incentives in one particular location could also increase the attractiveness of the targeted zones at the expense of neighboring places, inducing displacement effects, as it has been shown in the case of France (see Givord et al., 2013; Mayer et al., 2012). Third, as discussed below, they greatly improve the reliability of evaluations since researchers can better control for local and time varying characteristics that affect economic outcomes at a very local level.

3.2. Evaluation of enterprise zones schemes: different methodologies

Previous research has also widely varied in terms of empirical strategies. A first major challenge in the evaluation of enterprise zones is that zones designated by the policy are different from non-targeted zones. They are selected among the most deprived areas and are therefore likely to suffer from a constant attractiveness deficit in terms of economic activity. Moreover, policy makers might have selected fast growing, or on the opposite declining areas, depending on their objective, i.e. targeting the most distressed areas or targeting those with the highest recovery potential. Consequently, evaluations of such enterprise zones must be able to distinguish outcomes that result from prior economic conditions in the targeted areas from outcomes attributable to the implementation of the policy itself. Ideally, one would like to compare outcomes in targeted areas with outcome in untreated areas that have similar characteristics. Significant progress has been made recently to address these endogenity issues in a convincing way.

Most studies on enterprise zones rely on difference-in-difference approaches. They rely on before and after comparisons (Papke, 1994; Greenbaum and Engberg, 2004), combined with control groups consisting of areas qualifying for enterprise zones but which did not apply, of areas that applied but were rejected (Boarnet and Bogard, 1996; Hanson, 2009), or of areas later designated as enterprise zones (see for instance Busso et al., 2010; Neumark and Kolko, 2010). Areas that applied but were not selected can be seen as a more appropriate control group than areas which qualify but did not apply; indeed, applying reveals *per se* differences between applicants and non applicants, either in terms of expectation to be designated as enterprise zones, or in terms of the potential gains associated with the acquisition of the enterprise zone status. In this respect, using areas that obtain the enterprise zone status later (as soon as this is for some exogenous reason) contributes to improve the estimations given that in this case, those areas that were designated later fulfill all the criteria in terms of economic characteristics to be treated, as proved by the designation process, and are therefore probably very similar in terms of pre-treatment economic conditions.

Some other studies have relied on propensity score matching methods (see for instance O'Keefe, 2004; Elvery, 2009, Givord et al., 2013). This method consists in

matching each targeted zone with a zone that is similar in terms of observable economic characteristics, but lacking from the designation status. In a first step, the probability to be designated as an enterprise zone is estimated. Based on this estimation, each zone is matched and compared with the non-treated zones that had the same probability to be treated. The advantage of this method is that it ensures more comparability between the treated and the control groups, assuming that there are no other unobservable factors correlated with the treatment and the outcome of interest.

Difference-in-differences combined with matching techniques can limit some endogeneity issues, assuming that the remaining unobserved differences between treated and control group are constant over time. However, another major challenge the evaluation of enterprise zones has to face is that some time-varying unobservable factors might coincide with the implementation of the policy or affect the probability of treatment. In order to tackle this issue, researchers have recently used two different methods.

The first one consists in exploiting exogenous discontinuities in the design of the policy. This method has been used by Mayer et al. (2012) in their evaluation of the French program on business location. In France, only firms with less than 50 employees and a turnover inferior to 10 million euros are eligible to tax exemptions in enterprise zones. The authors use these eligibility criteria as a falsification test. They show that the probability to locate in French enterprise zones increases for eligible firms only, which tends to rule out the possibility that some unobservable time-varying factors affect the estimation of the impact of the policy.

The second method consists in spatial differencing or border analysis, i.e. in matching areas or establishment on the two sides of a border, and comparing the evolutions of the two zones across this border. Duranton et al, (2011) have recently proposed this method to assess the impact of local taxation on business and job creations in the UK. In the specific context of urban enterprise zones, Billings (2009) and Neumark and Kolko (2010) rely on this methodology. The advantage of this method is that it allows controlling for time varying unobservable factors, which are reasonably the same across the border at such a fine geographical scale; hence, it should considerably reduce potential biases in the estimation of the impact of the policy.[4]

Note that besides these technical difficulties, the multiplicity of results can also stem from the existence of some complex dynamics at work in targeted zones. Bondonio and Greenbaum (2007) show for example that employment gains associated with new entrants are sometimes offset by employment losses among incumbents, due to potential competition between two types of firms. This means that a clearer distinction should be made, when possible, between effects for incumbent firms and effects for newly created ones.

While the different techniques and methods in existing evaluations can explain part of the conflicting results, another explanation can lie in the heterogeneity in the efficiency of these enterprise zones along several dimensions.

[4] Note that this method is valid only if the border has been exogenously determined and if spillover effects are not too strong.

4.WHY SO MANY CONTRADICTORY RESULTS? HETEROGENEITY OF THE EFFECTS OF ENTERPRISE ZONES

Many papers in the literature have assumed that the effect of these policies is homogenous for all types of areas and industries (Papke, 1994; O'Keefe, 2004; Ham et al., 2011). However, there are several reasons why the effect of enterprise zones could be heterogeneous, and recent papers tend to show that such heterogeneity does exist.

4.1. The role of zones' initial characteristics

First, the initial characteristics of targeted zones may partly influence the efficiency of enterprise zone policies. It is for example well-known that firms tend to locate in places where other firms are already located: the probability that a firm chooses to locate in a given area increases with the number of firms in this area, mostly due to agglomeration economies (Head et al., 1995; Crozet et al., 2005). Consequently, even in the presence of fiscal incentives, firms might be reluctant to locate in places where they would be alone, since such a location would severely undermine their competitiveness. Devereux et al. (2006) actually show that the Regional Selective Assistance in the UK, a policy aimed at attracting plants in lagging regions, has on average a weak positive impact on firms' location decisions, and that this effect is all the more important that more firms are already present in the region. Such a result points at the difficulty for policy-makers to counteract the strong agglomeration forces driving the location decisions of firms.

Mayer et al. (2012) test for a similar idea in the case of French urban enterprise zones. Their evaluation is based on the analysis of more than forty enterprise zones designated in 2004. All these zones are areas that are generally repulsive to firms; however, they display significant differences in their initial attractiveness, as measured by the relative number of plants located within their boundaries as compared to the number of plants in the same municipality but outside the boundaries. Their results show that the probability that plants decide to locate in targeted zones rather than in the non-targeted part of municipalities increases after the implementation of the policy, and that this increase is more important for the zones that were initially less repulsive. The heterogeneity across targeted zones is actually quite substantial: while the probability to locate in French enterprise zones increase by 2.3 percentage points after the implementation of the policy (the probability to locate in these zones being initially equal to 8.9 percent), this effect grows to 3.6 percentage points when the attractiveness of the zone increases by one standard deviation.

Briant et al. (2012) also study the impact of the French urban enterprise zones, but they focus on the role of geographic isolation in determining the effect of the policy. More specifically, they build several indicators to assess how the neighborhoods composing enterprise zones are connected to the other parts of the city by transportation infrastructure; they also measure the geographic isolation of these zones, based on physical obstacles such as road severance for example. They find that the policy increases employment and the number of establishments in the less isolated targeted zones only, pointing at the importance of neighborhood accessibility to both workers and consumers as a determinant of firms' location decisions.

4.2 The role of the industrial sector

The impact of urban enterprise zones might also vary across sectors. Indeed, the match between the skills needed by firms and those available within targeted zones might not be equally good for all sectors. Also, firms might behave strategically and move temporarily, only for the period of time during which they can benefit from exemptions. In this case, firm mobility, which is partly sector-specific, might also play a role.

In this respect, the evidence provided in the literature is mixed. Boarnet and Bogart (1996) evaluate the impact of enterprise zones in New Jersey and distinguish four broad sectors: retail, manufacturing, services and FIRE (finance, insurance and real estate) sectors. The effect measured is statistically insignificant for all four sectors. Neumark and Kolko (2010) study the enterprise zones in California and argue that since they aim at creating jobs for zone residents, who are mainly low-skilled workers, the impact of enterprise zones might be stronger for lower-paying industries; however, their results do not support such a pattern in the Californian case. Lynch and Zax (2011) do not find neither heterogeneous effect across sectors for enterprise zones in Colorado: for all the sectors, the evolution of employment is not different within enterprise zones from what it is outside the zone, except for agriculture, that seems to be negatively affected by the policy.

The picture that emerges from the French case is very different. Mayer et al. (2012) investigate whether the positive impact of French enterprise zones on plant location decisions is stronger for industries in which firms are more mobile. Firms in a sector are said to be highly mobile when the share of transfers, i.e. of relocations of already existing plants, in total plant creations (transfers + "pure" creations) is high. Indeed, if plant-level fixed (re)location costs are low, firms can easily change location over their life cycle, and the number of transfers as compared to "pure" creations within the industry should be higher. This is actually what they find: the effect of the policy is more than five times stronger in highly mobile industries, i.e. in industries with a share of relocations in total plant creations above 25%, the median in the sample. Physicians and nurses, in particular, are shown to be highly responsive to the policy, a result also highlighted in Briant et al. (2012). This result is in line with the idea that such professions can easily move their office a few blocks away without losing their customer base, and can also come back quickly to their original location when subsidies stop.

4.3 The role of policy design

Finally, enterprise zone policies can take various forms, either in terms of money spent or in terms of type of incentives provided to firms. For example, in 2007, the French government spent on average 1,800 euros per worker and 360 euros per resident in the targeted areas, while in 2005, 240 dollars (around 200 euros) per worker were spent for enterprise zones in California (see Neumark and Kolko, 2010) and 60 pounds (around 90 euros) per resident in the working-age population were spent for Local Enterprise Growth Initiative areas in the UK (see Einio and Overman, 2011). In France, firms locating in enterprise zones benefit from exemptions on social contributions, business taxes, corporate taxes, land and property value taxes. In California, the program mainly provides a tax credit for hiring "disadvantaged" employees calculated as a share of wages, while in UK, local authorities spend the money on business support, skill acquisition programs for residents or improvements of the local environment. Bondonio and Engberg (2000) exploit the heterogeneity across enterprise

zone policies implemented in five different American states to assess the role of policy design. They do not find any significant impact of enterprise zones on local employment growth, whatever the amount of subsidies or the type of incentives provided (tied to job-creation or capital investment). However, the heterogeneity of the policies they study is quite limited and they cannot identify the exact boundaries of targeted zones in the data. We believe that the role of policy design and in particular the monetary values of tax incentives in the effectiveness of urban enterprise zone policies are an interesting avenue for future research.

5. THE COMPLEX EFFECTS OF ENTERPRISE ZONES: TOWARDS A COMPREHENSIVE APPROACH?

Most of the empirical papers on the evaluation of urban enterprise zones adopt a partial equilibrium approach. They generally investigate the impact of the policy on employment, business creation, wages or housing prices separately. They sometimes mention the potential effects of the policy on the other dimensions, but still do not provide an integrated approach. However, as discussed by Lynch and Zax (2011), the impact of such policies on the volume and the price of production factors heavily depends on the elasticity of substitution between factors, and on the price-elasticity of demand for the final good. Indeed, urban enterprise zone policies generally provide investment tax credits, credits for new jobs and/or for property taxes. Depending on the size of the different subsidies, the relative price of the production factors is modified, which should in turn affect the relative demand for these factors. Two effects are at play. On the one hand, the substitution effect will tend to increase the relative demand for the production factor which relative price decreases. This effect will be stronger when the elasticity of substitution between factors is high. On the other hand, the decrease in input prices tending to increase output, the scale effect should increase the demand for the various production factors, at a speed that is related to the price-elasticity of demand for the final good. The overall impact of the policy is determined by the sum of these two effects.

Whether these policy-induced changes in the demand for production factors will translate into adjustments in volumes and/or prices then depends on the supply-elasticity, and thus on the mobility of production factors. In case the supply of production factors is perfectly elastic, any decrease in the price of production factors will increase the level of activity in the enterprise zones. On the opposite, if the supply of production factors is inelastic, their price will increase, but the level of activity within targeted zones will remain unchanged. This issue is probably highly relevant for commercial real estate, which is linked to an immobile factor, land, and which supply is thus less elastic; if the provision of commercial offices is insufficient, the arrival of new establishments or the extension of incumbent firms will generate tensions on commercial rents. This is probably less of an issue for labor, which is more mobile, or available within the zones in case of high levels of unemployment among the zone residents who have the adequate skills.

Actually, most papers investigating the effect of enterprise zone policies find no significant effect on wages, as O'Keefe (2004) for California, Lynch and Zax (2011) for Colorado and Briant et al. (2012) for France. However, this latter study shows that beyond the null average impact of enterprise zones on wages, significant heterogeneity is at play: an increase in wages is observed only in zones that are geographically isolated. This is interesting, since it confirms the role of labor mobility in the price/quantity adjustment to enterprise zone policies: the zones that are less accessible face a less elastic labor supply, and consequently experience a lower increase in

employment and a higher increase in wages. Malgouyres et al. (2012), in a public report on French urban enterprise zones, also study the employment/wage response to the implementation of subsidies in targeted zones. They find a significant increase of employment, especially among lower-paid jobs (less than 10 euros per hour), which are the ones eligible to the social charge exemptions. Regarding wages, they find no significant impact of the policy. However, heterogeneity seems to be again important: once sector and workers' characteristics are taken into account, it seems that the wage of highly-paid workers (wage higher than 10 euros per hour) increases less rapidly within enterprise zones than outside these zones. This is consistent with the fact that the relative demand for this type of workers decreases in enterprise zones following the implementation of the policy.

Papers studying the impact of urban enterprise zones on land prices are far less numerous, good quality data on real estate being scarce. Boarnet and Bogart (1996) and Engberg and Greenbaum (1999) do not find any effect; however, their analysis relies on municipality, rather than enterprise zone level data. Hanson (2009) studies federal empowerment zones in the US, and using an instrumentation strategy, he finds a positive and substantial impact of empowerment zones on property values. This increase in the price of the immobile factor is in many studies suspected to reduce, or even to completely offset, the effect of the policy on employment (Lynch and Zax, 2011).

To our knowledge, Busso et al. (2013) are the first ones to propose a comprehensive evaluation of enterprise zones in a general equilibrium framework. General equilibrium studies generally adopt a structural approach, where theory strongly drives the empirical analysis. The objective of the empirical analysis is then to estimate the parameters of the model. It is important to note that this type of approach better accounts for general equilibrium effects, but that it also often imposes some constraints on the model and on the parameters. "Reduced-form" approaches, such as those cited before, are more flexible in this respect. Busso et al. (2013) develop a spatial equilibrium model which features heterogeneous workers, costly commuting, two sectors, wage subsidies for resident workers limited to one of the two sectors in one of the two neighborhoods of the city, and elastic housing supply. Within this framework, the authors can derive a complete analysis of the effects of enterprise zones on employment, wages, rental rate and welfare. They find theoretically that the deadweight loss associated with the implementation of the policy is all the more important that the number of workers changing residence is high. Their empirical findings tend to show that in the case of US empowerment zones, the policy increased employment and wages for resident workers, without impacting the size of the local population or housing costs, suggestive that the implementation of this program has been quite effective. The work by Busso et al. (2013) is an important first step. However, some elements could be added, such as unemployment (see Kline and Moretti, 2013a) and matching issues between firms and local workers for example, in order to see why, in some cases, enterprise zones might attract firms without drastically reducing unemployment of local residents (Gobillon et al., 2012). The assessment of costs and benefits both at the local and at the national level is also an important issue (Kline and Moretti, 2013b).

6. CONCLUSION

It is interesting to note that while the most recent studies on the French case were part of an evaluation program managed by the French Ministry of Labor and by the Ministry in charge of deprived urban areas, the ZFU policy was extended under the same conditions, before the results of the various evaluations were known. For sure, a better articulation between political decisions and impact evaluations would help to improve the design and the efficiency of these policies.

Most of the studies cited in this survey contribute to the evaluation of enterprise zone programs and provide complementary rather than conflicting insights on the effects of urban enterprise zone policies on business creation, local employment growth and on welfare implications for zone residents.

Several factors help explain why results of evaluations may appear contradictory depending on the country or depending on the program. Studies have used different evaluation methods to delineate the boundaries of targeted zones and to properly assess the impact of these policies, there are complex dynamics at work beyond average effects and the nature and importance of tax incentives is likely to affect the impact of the designation of enterprise zones.

However, with one exception, most analyses rely on partial equilibrium approach and therefore do not allow a comprehensive analysis of the general equilibrium effects of enterprise zones. A more systematic use of integrated frameworks would be a promising avenue of research. It would improve the quantitative and qualitative assessment of the effects of urban enterprise zone designation and would provide useful tools for policy-makers to run counterfactual exercises and better calibrate and orient their futures interventions.

Nevertheless, based on existing studies, it appears that when impacts exist, they are generally modest and/or do not necessarily translate into job opportunities for residents of the targeted zones. The better understanding of the sources of heterogeneity in the impact of these policies should help policy-makers to improve the targeting of programs they implement so as to maximize their effects. Other avenues could also be explored, such as subsidizing the hiring of zone residents in firms, whatever their location, rather than subsidizing firm location in targeted zones. Actually, the French government currently experiments this type of policy, called “Emplois francs”.

Moreover, in order to proceed to a cost/benefit analysis of these programs, some other dimensions would need to be investigated. A better identification of the time dimension of the estimated effects would be necessary in order to know whether business activity decreases, or whether workers lose their job once exemptions expire.[5] It could also be useful to identify the complementary policies that could affect the efficiency of these programs; such analysis could help, in particular, better understand why attracting new firms in depressed urban areas does not always create employment opportunities for zone residents. Finally, these programs might have longer-run and spillover effects on neighboring areas, the evidence on this issue being still relatively scarce. Trying to capture these dimensions is an important avenue for future research.

[5] See Givord et al. (2012) for a long-run analysis of French enterprise zones.

REFERENCES

Boarnet, M. G., Bogart, W. T., 1996, "Enterprise Zones and Employment: Evidence from New Jersey", *Journal of Urban Economics*, 40, pp. 198-215.

Bondonio, D., Engberg, J., 2000, "Enterprise Zones and Local Employment: Evidence from the States' Programs", *Regional Science and Urban Economics*, 30, pp.519-549.

Billings, S., 2009, "Do Enterprise Zones Work? An Analysis at the Borders", *Public Finance Review*, 37(1), pp. 68-93.

Bondonio, D., Greenbaum, R., 2007, "Do Local Tax Incentives Affect Economic Growth? What Mean Impacts Miss in the Analysis of Enterprise Zone Policies", *Regional Science and Urban Economics*, 37, pp. 121-136.

Briant, A., Lafourcade, M.., Schmutz, B., 2012, "Can Tax Breaks Beat Geography? Lessons from the French Enterprise Zone Experience", *PSE Working Paper 2012-22*.

Busso, M.., Gregory, J., Kline, P., 2013, "Assessing the Incidence and Efficiency of a Prominent Place-Based Policy", *American Economic Review*, 103, pp. 897-947.

Charlot, S., Dujardin, C., Goffette-Nagot, F., Havet, N., Sidibé M., 2012, « Accès à l'emploi dans les territoires des politiques de la ville: un appariement entre emplois et populations », *Report for the French Ministry of Labor*.

Crozet, M., Mayer T., Mucchielli, J.-L., 2004, "How do Firms Agglomerate? A Study of FDI in France", *Regional Science and Urban Economics*, 34, pp. 27-54.

Devereux, M., Griffith, R., Simpson, H., 2007, "Firm Location Decisions, Regional Grants and Agglomeration Externalities", *Journal of Public Economics*, 91, pp. 413-435.

Einio, E., Overman, H., 2011, "The Effects of Spatially Targeted Enterprise Initiatives: Evidence from UK LEGI", *mimeo.*

Engberg, J., Greenbaum, R., 1999, "State Enterprise Zones and Local Housing Markets", *Journal of Housing Research*, 10, pp. 163–187.

Givord, P., Rathelot, R., Sillard, P., 2013, "Place-Based Tax Exemptions and Displacement Effects: An Evaluation of the *Zones Franches Urbaines* Program," *Regional Science and Urban Economics*, 43(1), pp. 151-163.

Givord, P., Quantin, S., Trévien, C., 2012, "A Long Term Evaluation of the First Generation of the French Urban Enterprise Zones", *WP D3E n°G2012-07*.

Gobillon, L., Magnac, T., Selod, H., 2012, "Do Unemployed Workers Benefit from Enterprise Zones? The French Experience", *Journal of Public Economics*, 96, pp. 881-892.

Glaeser, E. L., Gottlieb, J. D., 2008, "The Economics of Place-Making Policies", *Brookings Papers on Economic Activity*, 2, pp. 155-239.

Hanson, A., 2009, "Local Employment, Poverty, and Property Value Effects of Geographically-Targeted Tax Incentives: an Instrumental Variables Approach", *Regional Science and Urban Economics*, 39, pp. 721–731.

Head, K., Ries, J., Swenson, D., 1995, "Agglomeration Benefits and Location Choice: Evidence from Japanese Manufacturing Investments in the United States", *Journal of International Economics*, 38, pp. 223-247.

Ham, J. C., Swenson, C., İmrohoroğlu, A., Song, H., 2011, "Government programs can improve local labor markets: Evidence from state enterprise zones, federal empowerment zones and federal enterprise communities", *Journal of Public Economics*, 95, pp. 779-797.

Hanson, A., Rohlin, S., 2011, "Do Location-Based Tax Incentives Attract New Business Establishments?", *Journal of Regional Science,* 51(3), pp. 427-449.

Kline, P., Moretti, E., 2013a, "Place based policies with unemployment", *American Economic Review Papers & Proceedings*, 103, pp. 238-243.

Kline, P., Moretti, E., 2013b, "People, places and public policy: Some simple welfare economics of local economic development programs", *NBER Working Paper n°19659*.

Lynch, D., Zax, J. S., 2011, "Incidence and Substitution in Enterprise Zone Programs: The Case of Colorado", *Public Finance Review*, 39, pp. 226-255.

Malgouyres, C., Mayer, T., Mayneris F., Py, L., 2012, « Évaluation des effets des politiques ciblées sur les territoires : le cas des Zones Franches Urbaines », *Report for the French Ministry of Labor*.

Mayer, T., Mayneris, F., Py, L., 2012, "The Impact of Urban Enterprise Zones on Establishment Location Decisions: Evidence from French ZFUs", *CEPR DP n° 9074.*

Neumark, D., Kolko, J., 2010, "Do Enterprise Zones Create Job? Evidence from California 's Enterprise Zone Program", *Journal of Urban Economics*, 68, pp. 1-19.

O'Keefe, S., 2004, "Job Creation in California's Enterprise zones: A Comparison using a Propensity Score Matching Model", *Journal of Urban Economics,* 55, pp. 131-150.

Papke, L. E., 1994, "Tax Policy and Urban Development: Evidence from the Indiana Enterprise Zone Program", *Journal of Public Economics,* 54, pp. 37-49.

Rathelot, R., Sillard, P., 2009, « Zones Franches Urbaines : quels effets sur l'emploi salarié et les créations d'établissements ? », *Economie et Statistique*, 415(1), pp. 81-96.

Wilder, M.G., Rubin B.M., 1996, "Rhetoric versus Reality: A Review of Studies on State Enterprise Zone Programs", *Journal of the American Planning Association,* 62, pp. 473-491.

Documents de Travail

460. J. Carluccio and M. Bas, “The Impact of Worker Bargaining Power on the Organization of Global Firms,” November 2013

461. F. Canova, F. Ferroni and C. Matthes, “Choosing the variables to estimate singular DSGE models,” November 2013

462. S. Avouyi-Dovi, G. Horny and P. Sevestre, “The dynamics of bank loans short-term interest rates in the Euro area: what lessons can we draw from the current crisis?,” November 2013

463. D. Fougère, C. Golfier, G. Horny et E. Kremp, “Quel a été l’impact de la crise de 2008 sur la défaillance des entreprises ?,” Novembre 2013

464. T. Duprey, “Heterogeneous Banking Efficiency: Allocative Distortions and Lending Fluctuations,” November 2013

465. L. Arrondel, M. Debbich and F. Savignac, “Financial Literacy and Financial Planning in France,” December 2013

466. P. Antipa, “Fiscal Sustainability and the Value of Money: Lessons from the British Paper Pound, 1797-1821,” December 2013

467. D. Bellas and Vincent Vicard, “French firms exports during downturns: evidence from past crises,” December 2013

468. V. Chouard, D. Fuentes Castro, D. Irac and M. Lemoine, “Assessing the losses in euro area potential productivity due to the financial crisis,” December 2013

469. G. Cléaud, M. Lemoine and P-A. Pionnier, “Which size and evolution of the government expenditure multiplier in France (1980-2010)?,” December 2013

470. D. Irac and J. Lopez, “Euro area structural convergence? A multi-criterion cluster analysis,” December 2013

471. L. De Benedictis, S. Nenci, G. Santoni, L. Tajoli and C. Vicarelli, “Network Analysis of World Trade using the BACI-CEPII dataset,” December 2013

472. G. Gaulier, G. Santoni, D. Taglioni and S. Zignago, “Market Shares in the Wake of the Global Crisis: the Quarterly Export Competitiveness Database,” December 2013

473. M. Mogliani, V. Brunhes-Lesage, O. Darné and B. Pluyaud, **“**New estimate of the MIBA forecasting model. Modeling first-release GDP using the Banque de France's Monthly Business Survey and the “blocking” approach,” January 2014

474. F. Mayneris and L. Py, **“**The Efficiency of Enterprise Zone Programs: Some Conflicting Results?,” January 2014

Pour accéder à la liste complète des Documents de Travail publiés par la Banque de France veuillez consulter le site :
www.banque-france.fr

For a complete list of Working Papers published by the Banque de France, please visit the website:
www.banque-france.fr

Pour tous commentaires ou demandes sur les Documents de Travail, contacter la bibliothèque de la Direction Générale des Études et des Relations Internationales à l'adresse suivante :

For any comment or enquiries on the Working Papers, contact the library of the Directorate General Economics and International Relations at the following address :

BANQUE DE FRANCE
49- 1404 Labolog
75049 Paris Cedex 01
tél : 0033 (0)1 42 97 77 24 ou 01 42 92 63 40 ou 48 90 ou 69 81
email : 1404-ut@banque-france.fr